IN THE CLAIMS

Upon entry of the present amendment, the status of the claims will be as is shown below. This listing of claims replaces all previous listings and versions of claims in the present application.

1. (Previously Presented) A cutting apparatus comprising a column and a support supporting a cutting blade, said support being configured to control a tilting angle of the cutting blade in a blade length direction, and the cutting blade being driven to be vertically movable relative to the support by a driving source supported by said support.

2. (Previously Presented) A cutting apparatus as set forth in claim 1, wherein a plurality of cutting blade units are provided, each having a different driving source, and each including a cutting blade, the support supporting the cutting blade, and the drive source provided above the support, each cutting blade unit being interchangeably provided to the column, each cutting blade unit being configured to control the tilting angle of the cutting blade in the blade length direction.

3. (Previously Presented) A cutting apparatus as set forth in claim 2, wherein at least one of said driving sources is a servomotor.

4. (Previously Presented) A cutting apparatus as set forth in claim 2, wherein at least one of said driving sources is a hydraulic servomotor.

5. (Previously Presented) A cutting apparatus as set forth in claim 2 wherein at least

one of said driving sources is a linear-motor.

6. (Previously Presented) A cutting apparatus comprising a column and a support supporting a cutting blade, said support being configured to control a tilting angle of the cutting blade in a blade length direction, and the cutting blade being driven to be vertically movable relative to the support by a driving source supported by said support,

wherein a sensing portion, movable in a blade length direction of a lowering cutting blade and extending parallel relative to a surface of an index table in a direction orthogonal to the blade length direction, is mounted on the surface of the index table,

wherein the index table, the sensing portion, the driving source of the cutting blade, and a tilter configured to control the tilting angle of the support are respectively linked with a controller;

wherein said controller processes and stores a tilting angle data of the cutting blade in the blade length direction by detecting a plurality of points of a knife edge in the blade length direction, using said sensing portion mounted on the surface of the index table, both before and after turning the index table by an angle of 90 degrees, and

wherein said controller further processes and stores a parameter of a lowering amount data of the cutting blade at a time of moving the cutting blade by a prescribed pitch, based upon a driving amount of the driving source of the cutting blade and based upon detecting the knife edge by said sensing portion, after moving the cutting blade by a prescribed amount

in a direction orthogonal to the blade length direction.

7. (Previously Presented) A cutting apparatus comprising a column and a support supporting a cutting blade, said support configured to control a tilting angle of the cutting blade in a blade length direction, and the cutting blade being driven to be vertically movable relative to the support by a driving source supported by said support,

wherein a sensing portion, movable in a blade length direction of a lowering cutting blade, is mounted on a surface of a index table,

wherein the index table, the sensing portion, the driving source of the cutting blade, and a tilter configured to control the tilting angle of the support are respectively linked with a controller;

wherein said controller processes a tilting angle data of the cutting blade in the blade length direction by detecting a plurality of points of a knife edge in the blade length direction, using said sensing portion mounted on the surface of the index table, both before and after turning the index table by an angle of 90 degrees, and

wherein said controller further processes and stores a parameter of a lowering amount data of the cutting blade at a time of moving the cutting blade by a prescribed pitch, based upon a driving amount of the driving source of the cutting blade, by moving the cutting blade tilted by the tilting angle data by a prescribed amount in a direction orthogonal to the blade length direction, lowering the cutting blade from the original position, and bringing a knife

edge into line contact with the index table.

8. (Previously Presented) A cutting apparatus as set forth in claim 6, wherein said sensing portion is controlled to move linearly in the blade length direction, and

wherein said sensing portion includes a top portion parallel to the surface of the index table and facing a direction orthogonal to the blade length direction.

9. (Previously Presented) A cutting apparatus as set forth in claim 7, wherein said sensing portion is controlled to move linearly in the blade length direction, and

wherein said sensing portion includes a top portion parallel to the surface of the index table and directed to a direction orthogonal to the blade length direction.

10. (Previously Presented) A cutting apparatus as set forth in claim 6, wherein said sensing portion comprises an optical sensor that detects a position of the knife edge of the cutting blade, said optical sensor being provided in a movable body having an upward opening, said movable body being controlled to move in the blade length direction of the cutting blade, and said movable body including an inner space of a predetermined size not interrupting movement of the cutting blade in a direction orthogonal to the blade length direction.

11. (Previously Presented) A cutting apparatus as set forth in claim 7, wherein said sensing portion comprises an optical sensor that detects a position of the knife edge of the cutting blade, said optical sensor being provided in a movable body having an upward

opening, said movable body being controlled to move in the blade length direction of the cutting blade, and said movable body including an inner space of a predetermined size not interrupting movement of the cutting blade in a direction orthogonal to the blade length direction.

12. (Previously Presented) A cutting apparatus as set forth in claim 7, wherein said sensing portion comprises a probe controlled to move linearly in the blade length direction, for detecting a displacement amount by being brought into contact with the knife edge of the cutting blade.

13. (Previously Presented) A cutting apparatus as set forth in claim 6, wherein said index table includes extractable positioners for mounting said sensing portion thereon, before and after turning the index table by an angle of 90 degrees.

14. (Previously Presented) A cutting apparatus as set forth in claim 7, wherein said index table includes extractable positioners for mounting said sensing portion thereon, before and after turning the index table by an angle of 90 degrees.

15. (Previously Presented) A cutting apparatus as set forth in claim 1, wherein an index table for cutting a work-piece, a driving source of the cutting blade, and a tilter configured to control the tilting angle of the support are respectively linked with a controller; and

wherein the controller processes a lowering amount data of the cutting blade from

both original top dead center positions, using a driving amount of the driving source, as a tilting angle data of the cutting blade in the blade length direction relative to a surface of the index table, the tilting angle data being processed by bringing a knife edge of one end side and a knife edge of the other end side into contact with the surface of the index table, by lowering the cutting blade from the original top dead center position, in a state where said cutting blade is slanted by a same angle respectively on one end side and other end side in the blade length direction both before and after turning said index table by an angle of 90 degrees, and

wherein said controller processes and stores a parameter of a lowering amount data of the cutting blade at a time of moving the cutting blade by a prescribed pitch, from a driving amount of the driving source of the cutting blade, by bringing the knife edge of the cutting blade into line contact with the index table, by lowering the cutting blade from the original top dead center position by moving the cutting blade tilted by the tilting angle data, by a prescribed amount in a direction orthogonal to the blade length direction.

16. (Previously Presented) A cutting apparatus as set forth in claim 6 wherein said sensing portion detects edge breakage of the knife edge of the cutting blade when cutting the work- piece, when the edge breakage is more than an allowable range, and

wherein a transmitter is configured to transmit information related to the cutting to an operator.

17. (Previously Presented) A cutting apparatus as set forth in claim 7, wherein said sensing portion detects edge breakage of the knife edge of the cutting blade when cutting the work-piece and, when the edge breakage is more than an allowable range, and

wherein a transmitter transmits information related to the cutting to an operator.

18. (Previously Presented) A cutting apparatus as set forth in claim 2, wherein said driving source is one of a servomotor, a hydraulic servomotor, a linear motor, an air cylinder, and a cam.

19. (New) A cutting apparatus as set forth in claim 1, wherein the support controls the cutting blade to tilt within a plane of the cutting blade.